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Material structure and functionality in product manufacturing

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Stellingen

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MATERIAL STRUCTURE AND FUNCTIONALITY IN PRODUCT MANUFACTURING

door

Gerrit Zijlstra

23 november 2018

01. Development of the performance of materials in practice is an ongoing interplay of processing, structure and functionality. *(Chapters 1 - 4)*
02. In contrast to the accepted view in literature, product shape change of AISI 420 steel may occur at much lower temperatures than the temperatures at which phase transformations occur. *(Chapter 3)*
03. The crystallography of a surface grain has a predominant influence on the microstructure and chemical composition of its oxide layer. *(Chapters 4 & 6)*
04. Interphase boundaries do not move continuous in time, but in a jerky-type fashion. *(Chapter 5)*
05. Two different phases may share an interface. However, an interface is not necessarily an interphase. *(Chapter 5)*
06. Recovery of a steel passive layer can be monitored in detail by Atomic Force Microscopy. *(Chapter 6)*
07. Van meer meten, komt minder weten.
08. Van meer maken, komen meer zaken. *(Jeff De Hosson)*
09. Complex questions require simple experiments, but complex experiments should answer the basic questions in physical sciences.
10. “A metal oxide may look, feel or even taste as a metal, it certainly is not a metal.”
(Jeff De Hosson)